

CLAIM AMENDMENTS

The following listing of claims replaces all prior versions and listings of claims in this application.

1. (Currently Amended) ~~A method of reducing power use in a device capable of operating at two or more power levels comprising:~~
selecting a range of power management timer settings for a first power management timer, the first power management timer for switching ~~the~~ a device from a first power level to a second power level wherein portions of the device are de-energized;
calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings; and
selecting a power management timer setting from the range of power management timer settings based on the estimated energy value to complete ~~a~~ the series of tasks for each of the plurality of settings within the range of settings.
2. (Original) The method of claim 1, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:
calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;
calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;
calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level; and
adding the first energy value, second energy value, and third energy value.
3. (Original) The method of claim 1, wherein selecting a range of power management timer settings further comprises selecting a range of power management timer settings for a second power management timer, the second power management timer for switching the device from the second power level to a third power level wherein additional portions of the device are de-energized.

4. (Original) The method of claim 3, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:
calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;
calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;
calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level;
calculating a fourth energy value representing energy used by the device to handle tasks received when the device is in a transition from the second power level to the third power level;
calculating a fifth energy value representing energy used by the device to handle tasks received when the device is in the third power level; and
adding the first energy value, second energy value, third energy value, fourth energy value, and fifth energy value.
5. (Currently Amended) The method of claim 3, wherein selecting ~~an~~ the power management timer setting from the range of power management timer settings comprises selecting a first power management timer setting and selecting a second power management timer setting.
6. (Original) The method of claim 1, further comprising modeling throughput for the device based on the range of power management timer settings.
7. (Currently Amended) The method of claim 6, wherein modeling throughput comprises calculating a total throughput delay incurred by processing ~~a~~ the series of tasks ~~value~~ for each of ~~a~~ the plurality of settings within the range of power management timer settings.
8. (Currently Amended) The method of claim 7, wherein calculating the total throughput delay incurred by processing ~~a~~ the series of tasks comprises:

- determining a first time for the device to handle ~~a~~ the series of tasks received when the device is in the first power level;
- calculating a first throughput delay value representing a second time for the device to handle the series of tasks received when the device is in a transition from the first power level to ~~a~~ the second power level minus the first time for the device to handle the series of tasks received when the device is in the first power level;
- calculating a second throughput delay value representing a third time for the device to handle the series of tasks received when the device is in the second power level minus the first time for the device to handle ~~a~~ the series of tasks received when the device is in the first power level; and
- adding the first throughput delay value and second throughput delay value.
9. (Currently Amended) The method of claim-~~6~~ 7, wherein selecting ~~an~~ the power management timer setting from the range of power management timer settings further comprises selecting ~~an~~ the power management timer setting based on the total throughput delay incurred by processing ~~a~~ the series of tasks.
10. (Currently Amended) A system ~~to reduce power use in a device capable of operating at two or more power levels~~ comprising:
a processor; and
a memory coupled with and readable by the processor and having stored therein a series of instructions that, when executed by the processor, cause the processor to select a range of power management timer settings for a first power management timer, the first power management timer for switching ~~the~~ a device from a first power level to a second power level wherein portions of the device are de-energized, calculate an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings, and select an power management timer setting from the range of power management timer settings based on the estimated energy value to complete ~~a~~ the series of tasks for each of the plurality of settings within the range of settings.

11. (Original) The system of claim 10, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:
calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;
calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;
calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level; and
adding the first energy value, second energy value, and third energy value.
12. (Original) The system of claim 10, wherein selecting a range of power management timer settings further comprises selecting a range of power management timer settings for a second power management timer, the second power management timer for switching the device from the second power level to a third power level wherein additional portions of the device are de-energized.
13. (Original) The system of claim 12, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:
calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;
calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;
calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level;
calculating a fourth energy value representing energy used by the device to handle tasks received when the device is in a transition from the second power level to the third power level;
calculating a fifth energy value representing energy used by the device to handle tasks received when the device is in the third power level; and

adding the first energy value, second energy value, third energy value, fourth energy value, and fifth energy value.

14. (Currently Amended) The system of claim 12, wherein selecting ~~an~~ the power management timer setting from the range of power management timer settings comprises selecting a first power management timer setting and selecting a second power management timer setting.
15. (Original) The system of claim 10, further comprising modeling throughput for the device based on the range of power management timer settings.
16. (Currently Amended) The system of claim 15, wherein modeling throughput comprises calculating a total throughput delay incurred by processing ~~a~~ the series of tasks for each of ~~a~~ the plurality of settings within the range of power management timer settings.
17. (Currently Amended) The system of claim 16, wherein calculating the total throughput delay incurred by processing a series of tasks comprises:
determining a first time for the device to handle ~~a~~ the series of tasks received when the device is in the first power level;
calculating a first throughput delay value representing a second time for the device to handle the series of tasks received when the device is in a transition from the first power level to ~~a~~ the second power level minus the first time for the device to handle ~~a~~ the series of tasks received when the device is in the first power level;
calculating a second throughput delay value representing a third time for the device to handle the series of tasks received when the device is in the second power level minus the first time for the device to handle ~~a~~ the series of tasks received when the device is in the first power level; and
adding the first throughput delay value and second throughput delay value.
18. (Currently Amended) The system of claim ~~15~~ 16, wherein selecting ~~an~~ the power management timer setting from the range of power management timer settings further

comprises selecting ~~an~~ the power management timer setting based on total throughput delay incurred by processing ~~a~~ the series of tasks.

19. (Currently Amended) A machine-readable medium having stored thereon a series of instructions representing a routine ~~to reduce power use in a device capable of operating at two or more power levels, the routine~~ that, when executed by a processor, causes the processor to:

select a range of power management timer settings for a first power management timer, the first power management timer for switching ~~the~~ a device from a first power level to a second power level wherein portions of the device are de-energized;

calculate an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings; and select an power management timer setting from the range of power management timer settings based on the estimated energy value to complete ~~a~~ the series of tasks for each of the plurality of settings within the range of settings.

20. (Original) The machine-readable medium of claim 19, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:

calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;

calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;

calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level; and

adding the first energy value, second energy value, and third energy value.

21. (Original) The machine-readable medium of claim 19, wherein selecting a range of power management timer settings further comprises selecting a range of power management timer settings for a second timer, the second power management timer for switching the device from the second power level to a third power level wherein additional portions of the device are de-energized.

22. (Original) The machine-readable medium of claim 21, wherein calculating an estimated energy value to complete a series of tasks for each of a plurality of settings within the range of power management timer settings comprises:
calculating a first energy value representing energy used by the device to handle tasks received when the device is in the first power level;
calculating a second energy value representing energy used by the device to handle tasks received when the device is in a transition from the first power level to the second power level;
calculating a third energy value representing energy used by the device to handle tasks received when the device is in the second power level;
calculating a fourth energy value representing energy used by the device to handle tasks received when the device is in a transition from the second power level to the third power level;
calculating a fifth energy value representing energy used by the device to handle tasks received when the device is in the third power level; and
adding the first energy value, second energy value, third energy value, fourth energy value, and fifth energy value.
23. (Currently Amended) The machine-readable medium of claim 19, wherein selecting ~~an~~ the power management timer setting from the range of power management timer settings comprises selecting a first power management timer setting and selecting a second power management timer setting.
24. (Original) The machine-readable medium of claim 19, further comprising modeling throughput for the device based on the range of power management timer settings.
25. (Currently Amended) The machine-readable medium of claim 24, wherein modeling throughput comprises calculating a total throughput delay incurred by processing ~~a~~ the series of tasks ~~value~~ for each of ~~a~~ the plurality of settings within the range of power management timer settings.

26. (Currently Amended) The machine-readable medium of claim 25, wherein calculating the total throughput delay incurred by processing ~~a~~the series of tasks comprises:
- determining a first time for the device to handle ~~a~~the series of tasks received when the device is in the first power level;
- calculating a first throughput delay ~~incurred by processing a series of tasks~~ value representing a second time for the device to handle the series of tasks received when the device is in a transition from the first power level to ~~a~~the second power level minus the first time for the device to handle ~~a~~the series of tasks received when the device is in the first power level;
- calculating a second throughput delay value representing a third time for the device to handle the series of tasks received when the device is in the second power level minus the first time for the device to handle ~~a~~the series of tasks received when the device is in the first power level; and
- adding the first throughput delay value and second throughput delay value.
27. (Currently Amended) The machine-readable medium of claim ~~24~~ 25, wherein selecting ~~an~~the power management timer setting from the range of power management timer settings further comprises selecting ~~an~~the power management timer setting based on the total throughput delay incurred by processing ~~a~~the series of tasks.